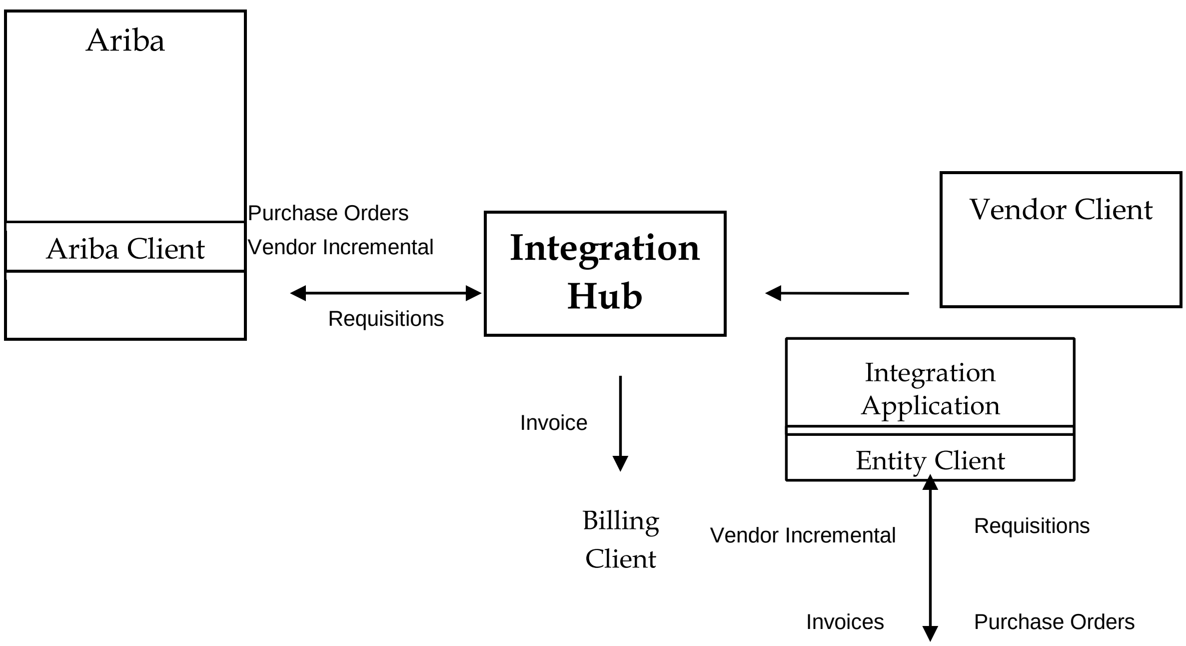
I. Entity Integration Client Overview

The Entity Integration Client is a component of a larger system that integrates the North Carolina EProcurement Service with an Entity's financial system. The Entity Integration Client passes requisitions, purchase orders, invoices, and vendors between E-Procurement and the Entity's financial system.

The following diagram describes the high-level architecture:



The Entity Integration Client writes requisition and vendor gXml files to the native file system directory's Requisition/Inbox and the Vendor/Inbox respectively. The Entity Financial System reads the files from these inboxes and deletes each file when processing is complete. If the Entity Financial System cannot process a particular file, it may move the file to the corresponding error directory. The Entity Integration Client does not read or write to the Requisition/Error or the Vendor/Error directories.

The Entity Financial System writes messages to the Order/Outbox and the Invoice/Outbox on the native file system. The Entity Integration Client checks these directories once a minute for files. When a file appears, the Entity Integration Client sends the contents to the Integration Hub and deletes the file. If the file does not validate to the gXml standard, the file is moved to the corresponding errorbox.

II. Installing Test Environment Entity Client

The following instructions outline the steps that need to be taken to in order to install the Entity Integration Client. The steps will cover the following:

- Installing the Entity Integration Client
- Starting the Entity Integration Client service
- Stopping the Entity Integration Client service
- Switching from a QA installation of the Entity Integration Client to a production installation
- Requesting the vendor baseline

In order to install the Entity Integration Client, the following files will be provided on a CD:

- hubclient.zip
- BootStrap.xml and License.p12 for QA installation
- BootStrap.xml and License.p12 for production installation
- Vendor messages for baseline

System configuration assumptions:

- Java 1.4.1_03 will be installed using the 'root' user using the umask of '022'.
- The Entity Integration Client will be installed and run with the same user. This user will be called 'epladmin' with the group 'users'.
- The root of the Entity Integration Client installation will be /usr/hubclient.
- The root of the Java 1.4.1_03 installation will be /opt/java141/j2re1.4.1_03.
- The installation CD will be mounted in '/cdrom/cdrom0/' directory.
- Korn shell will be used.

Installing the Entity Integration Client in the QA environment:

1. Create a group called 'users'. Create a login user called 'epladmin' with a primary group of 'users' and an initial shell of kornshell. In the 'epladmin' user '.profile' file add the line:
   $ JAVA_HOME=/opt/java141/j2re1.4.1_03; export JAVA_HOME
2. Create the directory for java141 under /opt, download JRE 1.4.1_03 and run the action in the /opt/java141/ directory.
3. Confirm Java 1.4.1_03 is installed in /opt/java141/j2re1.4.1_03.[1] All necessary files and instructions may be obtained from the Sun Java web site. This installation should be completed using the 'root' user.
4. Still using the 'root' user, create the /usr/hubclient/ folder. Change directory ownership to 'epladmin'. Use the following commands:
   $ mkdir /usr/hubclient/ $ chown
   epladmin /usr/hubclient/
5. Login using the 'epladmin' user.

[1] To check the current java version, type "java –version" on the command prompt. This command will return the java version in the directory path. Multiple java versions may be installed on a machine. The version that will be "active" is the version first found in the directory path.

6. Unzip the hubclient.zip file using epladmin. Do not do this as the 'root' user. Use the following command:
   $ unzip /cdrom/cdrom0/os/solaris/nchubcli.zip -d /usr/
7. Update the execution permissions for the script files using the following command: $ chmod +x /usr/hubclient/bin/*sh
8. Copy the QA environment files to the client. Use the following command: $ cp -r /cdrom/cdrom0/environm/qa/* /usr/hubclient/
   $ mv /usr/hubclient/config/bootstra.xml /usr/hubclient/config/BootStrap.xml
9. Change directories to the root Entity Integration Client directory. Use the following command:
   $ cd /usr/hubclient
10. Initialize the Entity Integration Client. It may take up to 15 minutes for this process to complete. If the process does not complete in this time, please contact the NC E-Procurement Helpdesk (see Section VI). This needs to be run only once during the install. This forces the deployment of all files for the integration client. Each time the client starts; the client checks the Hub for updates to these files and downloads them as needed. Use the following command:
    $ bin/iclient.sh init
11. After the initialization completes, confirm that the files Kernel.xml and Deploy.xml appear in the /usr/hubclient/config folder. The time stamp on the files should correspond to the time the initialization completed.

Once the initialization is complete, you will need to start the Entity Integration Client.

1. Log into the Entity Integration Client Machine with user 'epladmin'.
2. Change directories to the root Entity Integration Client directory using the following command:
   $ cd /usr/hubclient
3. Start the Entity Integration Client using the following command: $ nohup bin/ic.sh start &
4. Wait five minutes and then confirm the folder '/usr/hubclient/messages' is created. The following directory structure is created at startup of the Entity Integration Client:

```
hubclient\messages
├───invoice
│   ├───error
│   └───outbox
├───order
│   ├───error
│   └───outbox
├───requisition
│   └───inbox
├───temp
│   └───vendorBuffer
└───vendor
    ├───inbox
    └───sync
```

5. Create directories used by the EPLService program. Use the following command:
   $ mkdir messages/requisition/error
   $ mkdir messages/vendor/error

6. Stop the Entity Integration client using the following command:
   $ bin/ic.sh stop
   If the process does not stop within one minute, the process can be killed. To check to see if the process has stopped run this command: $ ps -ef | grep hubclient | grep –v grep
   If this command return nothing, the process has stopped. If the processes do not stop within one minute run this command:
   $ kill -9 [PID]
7. Proceed to EPL Service installation.

III. Entity Client Production Conversion

When it is time to switch from the QA installation to a production installation, the following steps will need to be completed.

1. Log into the Entity Integration Client Machine with user 'epladmin'.
2. Change directories to the root Entity Integration Client directory using the following command:
   $ cd /usr/hubclient
3. Shutdown the Entity Integration Client using the following command:
   $ bin/ic.sh stop.
   It will take 30 seconds to one minute to stop the process.
4. Clear the 'queues' directory using the following command: $ rm queues/*
5. Clear the 'logs' directory using the following commands: $ rm logs/*
6. Copy the PROD environment files to the client using the following command: $ cp -r /cdrom/cdrom0/environm/prod/* /usr/hubclient/
   $ mv /usr/hubclient/config/bootstra.xml /usr/hubclient/config/BootStrap.xml 7.
   Update the execution permissions for the script files using the following command: $ chmod +x /usr/hubclient/bin/*sh
8. Start the Entity Integration Client using the following command: $ nohup bin/ic.sh start &
9. After running for a few minutes verify this process by running:
   $ grep –c "hubadmin.ncgov.com" config/Kernel.xml The command should return "1".

IV. Vendor Baseline

A baseline request needs to be issued once the Entity Client has been upgraded to a production installation. This should be completed the night before the user expects to load the vendors into Colleague. These steps will move all the vendors from the CD to the Entity Client and request all vendor updates be sent to the Entity Client in the next nightly extract so that they are ready to be loaded into the Entity Financial System.

1. Log into the Entity Integration Client Machine with user 'epladmin'.
2. Copy all of the vendor files from CD using the following commands:
   $ cp /cdrom/cdrom0/vendor/*.xml /usr/hubclient/messages/vendor/inbox
   $ chmod 700 /usr/hubclient/messages/vendor/inbox/*
   Since this is copying over 32,000 files, it can take 45 minutes to complete.
3. Once the copying is complete, check to see if the Entity Integration Client is running by using the following command:
   $ ps -ef | grep hubclient | grep –v grep
   If the command does not return anything, the Entity Integration Client is not running. Start the Entity Integration Client if it is not running (see Section V). Please wait one minute after starting the Entity Integration Client before proceeding to the next step.
4. Change directories to the root Entity Integration Client directory using the following command:
   $ cd /usr/hubclient
5. Find the date the baseline on CD was generated. Use this command:
   $ ls –l /usr/hubclient/messages/vendor/inbox
   From the file list, find the modified date of the files. Now request a partial baseline 5 days prior to that date. For example if the date of the vendor files is 05/20/2004, request a baseline back to the date 05/15/2004. Send the Baseline request using the following command:
   $ bin/blreq.sh [back_date]
   For this example the back_date would be 05/15/2004, the date on your CD could be different. The back_date MUST be in the format mm/dd/yyyy.
6. The text "Your baseline request will be processed the night of the day it is received." will appear on the screen when completed successfully.

V. Maintaining the Entity Integration Client

Once the Entity Integration Client has been installed, there should be little maintenance by the System Administrator. However, there will be times when the System Administrator will be requested to perform some actions on the Entity Integration Client. The following are the types of requests that the System Administrator may get concerning the Entity Integration Client:

- Starting the Entity Integration Client
- Stopping the Entity Integration Client
- Requesting a partial baseline
- Sending logs to the North Carolina E-Procurement Team

To start the Entity Integration Client:

1. Log into the Entity Integration Client Machine with user 'epladmin'.
2. Change directories to the root Entity Integration Client directory using the following command:
   $ cd /usr/hubclient
3. Start the Entity Integration Client using the following command: $ nohup bin/ic.sh start &
4. Use this commend to verify the Entity Integration Client is running:
   $ ps -ef | grep hubclient | grep –v grep
   The command should return the processes associated with the Entity Integration Client.

To stop the Entity Integration Client:

1. Log into the Entity Integration Client Machine with user 'epladmin'.
2. Change directories to the root Entity Integration Client directory using the following command:
   $ cd /usr/hubclient
3. Shutdown the Entity Integration Client using the following command:
   $ bin/ic.sh stop
   If the process does not stop within one minute, the process can be killed. To check to see if the process has stopped run this command:
   $ ps -ef | grep hubclient | grep –v grep
   If this command return nothing, the process has stopped. If the processes do not stop within one minute run this command:
   $ kill -9 [PID]

To request a vendor baseline (full or partial) to the production Entity Integration Client:

1. Log into the Entity Integration Client Machine with user 'epladmin'.
2. Check to see if there is a running Entity Integration Client using the following command:
   $ ps -ef | grep hubclient | grep –v grep
   If the command does not return anything, the Entity Integration Client is not running. Start the Entity Integration Client if it is not running.
3. Change directories to the root Entity Integration Client directory using the following command:
   $ cd /usr/hubclient

4. Send the Baseline request for 10/15/2003 using the following command:
   $ bin/blreq.sh 10/15/2003
5. The text "Your baseline request will be processed the night of the day it is received" will appear on the screen when completed successfully.

To send logs to the E-Procurement team:

The logs are located in the '/usr/hubclient/logs/' folder. The E-Procurement team may make a request for files in this folder. These files can be e-mailed to the team.

VI. NC E-Procurement @ Your Service Helpdesk

If you have questions about the Entity Integration Client please call the NC E-Procurement @ Your Service Helpdesk at 888-211-7440 (7:30 am - 5:00 pm, weekdays).